Bill Nye the Science Guy

# Ocean Exploration

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# Implementation Guide

***Welcome to Disney's Bill Nye DVD collection! With the help of this Guide you can bring instructional DVDs into your science curriculum.***

## What's on the DVD?

Bill Nye DVDs expand the educational features of *Bill Nye the Science Guy* programs. Each DVD provides students with science content through video clips aligned with *National Science Education Standards (NSES)* and a host of other resources.

Short video clips aligned with the NSES provide a unique opportunity for you to enhance your lessons using DVD technology. Now you can show a video clip, or even short segments of a clip, on command. But there are a host of other features, too! See the chart below for a summary.

### From the Main menu, there are three chief sections:

| Feature | Description |
|---|---|
| Watch Program Menu | From this menu, you can play the program straight through or use the clips to customize your viewing. |
| Teacher Support | From this menu, you can access this Teacher's Guide, the Glossary, Internet Links, and the Quiz. |
| Bonus Materials | Use this menu to try a different discussion starter, download a special screen-saver, or check out never-before-seen footage. |

### From the Watch Program menu, you can:

| Feature | Description |
|---|---|
| Play Program | Play the entire program from start to finish. |
| Bilingual Mode | View the entire program or clips in English or Spanish. |
| Glossary Mode | Make links to Glossary terms appear during the program. |
| Program Overview | View the program introduction, in which Bill discusses the topic covered. |
| Try This | Show students demonstrating science concepts. |
| Way Cool Scientist | Meet a real scientist who talks about his or her area of study. |
| Bill's Demonstration | Look at a science demonstration conducted by Bill Nye. |
| Music Video | Enjoy a short music video that summarizes the topic in an age-appropriate and entertaining manner. |
| Science Standards | Take advantage of short video clips from the program, which are aligned with National Science Education Standards. |

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### From the Teacher Support menu, you can:

| Feature | Description |
|---|---|
| Science Quiz | Give students a quiz to take independently or as a class. Seven to ten quiz items are aligned with the National Science Education Standards. The items are in multiple-choice or true-false format. Each wrong answer links to a standards-aligned video clip. At the end of the quiz, a scoring function reveals the number of correct initial answers. |
| Glossary | Check out definitions of key terms and view video clips that reinforce the concepts. |
| DVD Features | View a quick overview of the features found on the DVD. |
| Teacher's Guide | Print out or view this comprehensive Teacher's Guide in PDF format. |
| Internet Link | Link to the Bill Nye area of Disney's Edustation Web site, where you can find links to Internet sites related to the content of each Bill Nye program. |

### From the Bonus Materials menu, you can:

| Feature | Description |
|---|---|
| Bonus Material | Find out what *wasn't* in the episode! In most cases, there's more of the Way Cool Scientist interview, Bill Nye outtakes, and an extra discussion starter. |
| Additional Clips | See trailers of related DVDs and videos. |
| Screen-Saver | Download this cool screen-saver for your computer. |

## The Planning Process

This Guide provides a Lesson Planning Worksheet (see page 12), which can assist you in setting up your instruction around a topic. The following sections of this Implementation Guide are offered to assist your planning process:

- **Determining Objectives and Linking to Standards**
- **The Learning Cycle**
  - **Explore**
  - **Apply**
  - **Extend**
  - **Assess**

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## Determining Objectives and Linking to Standards

1. The NSES Teaching Standard A states that science teachers must "select science content and adapt and design curricula to meet the interest, knowledge, understanding, abilities, and experience of students."

   The NSES recommends that teachers "integrate . . . a practical structure for the sequence of activities, and the content to be learned." The primary instructional model recommended by the NSES is inquiry into authentic student-generated questions about natural or designed phenomena. Since most state and local standards documents were derived from the NSES, you will find that your local and state standards match closely with content standards in the Bill Nye DVD.

   Each DVD contains a menu of clips that are aligned with the NSES. You can review the standards and their aligned clips in the Science Standards menu under Watch Program. Also, the Standards listed on page 10 of this Guide allow you to look at additional NSES content standards that are addressed on the video. Here's an example of the content standards and clips aligned with the Bill Nye DVD entitled *Blood and Circulation*:

### Life Science Standards (NSES) Addressed in *Blood and Circulation*

**Life Science:**
**Structure and function in living systems**

- **Living systems at all levels of organization demonstrate the complementary nature of structure and function.**

  **Aligned clips:**

  - **1 Blood vessels**
  - **2 Heart pump and bloodstream**
  - **3 Heart valves and blood circulation**
  - **4 White blood cells**
  - **5 Capillaries**

- **The human organism has systems for digestion, respiration, reproduction, circulation, excretion, movement, control, and coordination, and for protection.**

  **Aligned clips:**

  - **6 Heart pump**
  - **7 Heart muscle**
  - **8 Pumping blood to brain**

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2. Determine your objectives for the lesson and how these objectives address the standards.

### Sample Objectives for *Blood and Circulation*

**In this activity students will:**

- **Observe and describe a body system responsible for supply and transport.**
- **Use this information to define a body system.**
- **Ask questions about the circulatory system.**
- **Explain how structure complements function in organs of the circulatory system.**
- **Cite examples of current research related to this system.**

3. Design a learning cycle of instructional experiences and assessments for the students to engage in that will help students meet these standards. Students may be given teacher-planned investigations or may be guided to design their own investigations.

## The Learning Cycle

The learning cycle is a sequence of activities that involve students in the learning process. The sequence found here is based on research from Lawson**,** Abraham, and Renner published in 1989. That has been adapted to include: Explore, Apply, Extend and Assess:

**Explore:** Involves assessing students' prior knowledge and providing opportunities for students to interact with content from the video.

**Apply:** Includes having students use the content learned during the Explore section in a new way that is meaningful to future learning.

**Extend:** Allows students to conduct further research around an area of interest within the topic.

**Assess:** Provides strategies meant to inform students and teachers about the content and processes that have been learned.

## Explore

The NSES Teaching Standard B states: "Teachers of science guide and facilitate learning." This standard addresses the constant need to balance your predetermined goals with allowing students to set and meet their own learning goals.

*Focus and Support Inquiries*: Support student inquiries by making decisions about "when to provide information" and "when to connect students with other sources." Knowing the best time to intervene is often determined by allowing students to ask questions and to explore concepts openly.

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The NSES Teaching Standard C states: "Teachers of science engage in ongoing assessment of their teaching and of student learning."

*Assess in Order to Guide Teaching:* The Program Overview or the Discussion Starter on the DVD can be used to gauge students' prior knowledge. You can use student responses to make decisions about appropriate instruction and adaptations in order to meet the needs of individual students. Assessment can be in the form of student reflections from standards-aligned video clips or answers to questions found on the science quiz. Or, as in the following example, a simple graphic organizer can facilitate a formative assessment.

### Example: T-Chart from *Blood and Circulation*

1. Ask students to fill out the "Know-New" T-Chart (see page 14). Have them list what they already know about the circulatory system (heart, blood vessels, blood, etc.) on the left side of their charts.

2. Show the Program Overview for *Blood and Circulation*. On the right side of the chart, have students list new things they have learned from watching the clip. Walk around the room and assist students in filling in their T-Charts. Replay the program as necessary to allow students to review sections of interest.

3. Once students have completed their charts, ask them to share what they have listed in the "New" column. Write these on the board. Have students write their own working definitions of the circulatory system. Once students have completed their definitions, collect and review their work to assess prior knowledge.

Conduct direct vocabulary instruction in the Explore phase. Research suggests that:

- Students must encounter words in context more than once to learn them.
- Instruction in new words enhances learning those words in context.
- One of the best ways to learn a new word is to associate an image with it.
- Direct vocabulary instruction on words that are critical to new content produces the most powerful learning.

Use the DVD Glossary with the linked video clips to expose students to new vocabulary words in context, along with associated video images. You can also find a printed version of the glossary terms in this Guide on page 16.

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### Example: Using the Glossary for Direct Vocabulary Instruction
### *Blood and Circulation*

1. Present students with a brief explanation or description of the new term or phrase from the glossary. For example: “Capillary: A small blood vessel that connects arteries and veins.”
2. Present students with a nonlinguistic representation of the new term or phrase. Show the video clip associated with the term “capillary.”
3. Ask students to generate their own verbal description of “capillary.”
4. Ask students to create their own nonlinguistic representation of “capillary.”
5. Periodically ask students to review the accuracy of their explanations and representations. This can be done after the Apply activities.

## Apply

Based on the information you gained from the Explore assessments, design appropriate activities for your students. Check the experiments listed in the Episode Guide (see page 11) for explanations of the demonstrations from the Bill Nye program as well as for additional experiments designed to help apply the knowledge gained.

In the following example from *Blood and Circulation*, the standards-based video clips provide background information, and an experiment from the Guide helps students apply what they have learned about arteries and veins.

### Example: The Structure and Function of Arteries and Veins

1. Have students begin “Know-New” T-Charts, focusing on what they already know about the structure and function of blood vessels, arteries, and veins.
2. Watch the following chapters from the Bill Nye DVD *Blood and Circulation*:
   - Blood vessels
   - Heart pump and bloodstream
   - Capillaries
3. Complete the “Know-New” T-Charts.
4. Give students copies of the Student Recording Sheet (see page 15) and have them fill the sheets out as they conduct their experiments.
5. Do the experiment entitled “Pump it Up!” from the *Blood and Circulation* Episode Guide, in which students observe the apparent effects of pressure on arteries and veins.
6. Write down any remaining questions about the structure and function of blood vessels, arteries, and veins.

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## Extend

The NSES Teaching Standard D states: "Teachers of science design and manage learning environments that provide students with the time, space, and resources needed for learning science." School administrators, parents, and the community can assist teachers in providing local resources that make science lessons pertinent and meaningful.

*Identify and Use Resources Outside of the School:* "The school science program must extend beyond the walls of the school." Each Bill Nye DVD contains resources designed to facilitate such understanding, including:

- Way Cool Scientist, found in both Watch Program and Bonus Materials, in which scientists discuss their current areas of study. This real-world connection often results in a deeper student understanding of a particular career.
- Disney's Edustation Web site, where relevant Internet links provide a starting point for students to further explore science topics.
- Try these video clips, with activities parents and students can do at home. The questions generated by students from these experiences can be used as foundations from which they may conduct their own research.
- Standards-aligned video clips and Bill's demonstration video clips, which can help generate topics for further research. After viewing the clips, have students list their questions, perhaps about the most current developments in a topic. By conducting online or library research, students will find answers to their questions and will learn about a topic in greater depth.

### Example: Conducting Student Research Using *Blood and Circulation*

Ask students to choose one of the questions they had after completing the activities from *Blood and Circulation*. An example of a student research question might be, "How has the technology related to artificial hearts advanced in the last ten years?" Explain to students that they will be conducting research to find answers to their questions. Some students may want to complete online or library research, others may want to ask an expert in the field, while others may want to design and conduct a scientific investigation. Encourage students to write a detailed procedure for finding answers to their questions. Ask students to find one or more examples of current research dealing with the circulatory system that is related to their question. NOTE: Students with similar questions may work together to complete the assignment.

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## Assess

Once students have conducted the research, you may choose to assess them in a number of different ways:

- By having students write about what they learned in a journal.
- By having students submit projects or reports.
- By having students take the program quiz to gauge their understanding of certain facts in the video. You can either print the quiz (found in this Guide on page 18) and have each student complete it individually or use the DVD screen version and the scoring feature for whole-class assessment.
- By designing other standards-aligned questions to augment those that are provided.

While the quiz will provide you with information about what the students have learned, it does not assess how students have processed the information. Below you will find assessment ideas that can be used to measure both content and process.

### A Sample Assessment for *Blood and Circulation*

1. Explain to students that an important aspect of scientific inquiry is to communicate findings to others. In this assessment, students will present the following information to their peers:
   - The question they investigated.
   - The method that was used to find answers to their question.
   - Problems or successes during the search.
   - Answers to their question.
   - Current research related to their question.
   - New questions that have arisen.
2. Distribute the rubric found in the Lesson Planning Worksheet (see page 13) to students so they know how they will be assessed. Make sure students understand the criteria found in the rubric. Before you begin, you may want to allow students to make changes to the rubric so that it is clearer or makes more sense from their perspectives.
3. Allow students time to gather information to answer their questions and to prepare for their presentations. As students conduct this work, walk around the room and ask questions to assess their progress and provide input as needed.
4. Take a few minutes to clarify the rules of the presentation with the students. You may want to have multiple copies of the rubric available so that peers can rate the presentations.
5. As presentations are made, assess the quality of the student's work as thoroughly and as equitably as you possibly can.

Congratulations! You have now completed the steps to set up a lesson plan using the Lesson Planning Worksheet. You have also explored many of the features of the Bill Nye DVD as well as the supplemental information found in this Teacher's Guide. And most important, you've made significant strides toward incorporating DVD technology into your day-to-day instruction.

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# National Science Education Standards

## *Ocean Exploration*

### *Standards/Benchmarks*

## Science as Inquiry

### Abilities necessary to do scientific inquiry

- Identify questions that can be answered through scientific investigations.
- Design and conduct a scientific investigation.
- Use appropriate tools and techniques to gather, analyze, and interpret data.
- Develop descriptions, explanations, predictions, and models using evidence.

### Understandings about scientific inquiry

- Different kinds of questions suggest different kinds of scientific investigations. Some investigations involve observing and describing objects, organisms, or events; some involve collecting specimens; some involve experiments; some involve seeking more information; some involve discovery of new objects and phenomena; and some involve making models.
- Current scientific knowledge and understanding guide scientific investigations. Different scientific domains employ different methods, core theories, and standards to advance scientific knowledge and understanding.
- Technology used to gather data enhances accuracy and allows scientists to analyze and quantify results of investigations.
- Scientific explanations emphasize evidence, have logically consistent arguments, and use scientific principles, models, and theories. The scientific community accepts and uses such explanations until displaced by better scientific ones. When such displacement occurs, science advances.
- Scientific investigations sometimes result in new ideas and phenomena for study, generate new methods or procedures for an investigation, or develop new technologies to improve the collection of data. All of these results can lead to new investigations.

## Physical Science

### Properties and changes of properties in matter

- A substance has characteristic properties, such as density, a boiling point, and solubility, all of which are independent of the amount of the sample. A mixture of substances often can be separated into the original substances using one or more of the characteristic properties.
- Substances react chemically in characteristic ways with other substances to form new substances (compounds) with different characteristic properties. In chemical reactions, the total mass is conserved. Substances often are placed in categories or groups if they react in similar ways; metals is an example of such a group.

### Motions and forces

- If more than one force acts on an object along a straight line, then the forces will reinforce or cancel one another, depending on their direction and magnitude. Unbalanced forces will cause changes in the speed or direction of an object's motion.

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### Transfer of energy

- Energy is a property of many substances and is associated with heat, light, electricity, mechanical motion, sound, nuclei, and the nature of a chemical. Energy is transferred in many ways.

## Life Science

### Structure and function in living systems

- Living systems at all levels of organization demonstrate the complementary nature of structure and function. Important levels of organization for structure and function include cells, organs, tissues, organ systems, whole organisms, and ecosystems.

### Regulation and behavior

- Regulation of an organism's internal environment involves sensing the internal environment and changing physiological activities to keep conditions within the range required to survive.

### Populations and ecosystems

- A population consists of all individuals of a species that occur together at a given place and time. All populations living together and the physical factors with which they interact compose an ecosystem.

## Earth and Space Science

### Structure of the earth system

- The solid earth is layered with a lithosphere; hot, convecting mantle; and dense, metallic core.
- Lithospheric plates on the scales of continents and oceans constantly move at rates of centimeters per year in response to movements in the mantle. Major geological events, such as earthquakes, volcanic eruptions, and mountain building, result from these plate motions.
- Land forms are the result of a combination of constructive and destructive forces. Constructive forces include crustal deformation, volcanic eruption, and deposition of sediment, while destructive forces include weathering and erosion.
- Water, which covers the majority of the earth's surface, circulates through the crust, oceans, and atmosphere in what is known as the "water cycle." Water evaporates from the earth's surface, rises and cools as it moves to higher elevations, condenses as rain or snow, and falls to the surface where it collects in lakes, oceans, soil, and in rocks underground.
- Water is a solvent. As it passes through the water cycle it dissolves minerals and gases and carries them to the oceans.
- The atmosphere is a mixture of nitrogen, oxygen, and trace gases that include water vapor. The atmosphere has different properties at different elevations.

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## Science and Technology

### Understandings about science and technology

- Scientific inquiry and technological design have similarities and differences. Scientists propose explanations for questions about the natural world, and engineers propose solutions relating to human problems, needs, and aspirations. Technological solutions are temporary; technologies exist within nature and so they cannot contravene physical or biological principles; technological solutions have side effects; and technologies cost, carry risks, and provide benefits.
- Many different people in different cultures have made and continue to make contributions to science and technology.
- Science and technology are reciprocal. Science helps drive technology, as it addresses questions that demand more sophisticated instruments and provides principles for better instrumentation and technique. Technology is essential to science, because it provides instruments and techniques that enable observations of objects and phenomena that are otherwise unobservable due to factors such as quantity, distance, location, size, and speed. Technology also provides tools for investigations, inquiry, and analysis.
- Perfectly designed solutions do not exist. All technological solutions have trade-offs, such as safety, cost, efficiency, and appearance. Engineers often build in back-up systems to provide safety. Risk is part of living in a highly technological world. Reducing risk often results in new technology.
- Technological designs have constraints. Some constraints are unavoidable, for example, properties of materials, or effects of weather and friction; other constraints limit choices in the design, for example, environmental protection, human safety, and aesthetics.

## Science in Personal and Social Perspectives

### Science and technology in society

- Science influences society through its knowledge and world view. Scientific knowledge and the procedures used by scientists influence the way many individuals in society think about themselves, others, and the environment. The effect of science on society is neither entirely beneficial nor entirely detrimental.
- Scientists and engineers work in many different settings, including colleges and universities, businesses and industries, specific research institutes, and government agencies.
- Science cannot answer all questions and technology cannot solve all human problems or meet all human needs. Students should understand the difference between scientific and other questions. They should appreciate what science and technology can reasonably contribute to society and what they cannot do. For example, new technologies often will decrease some risks and increase others.

## History and Nature of Science

### Science as a human endeavor

- Women and men of various social and ethnic backgrounds—and with diverse interests, talents, qualities, and motivations—engage in the activities of science, engineering, and related fields such as the health professions. Some scientists work in teams, and some work alone, but all communicate extensively with others.
- Science requires different abilities, depending on such factors as the field of study and type of inquiry. Science is very much a human endeavor, and the work of science relies on basic human qualities, such as reasoning, insight, energy, skill, and creativity—as well as on scientific habits of mind, such as intellectual honesty, tolerance of ambiguity, skepticism, and openness to new ideas.

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# Episode Guide

## *Ocean Exploration*

| Nifty Questions in This Episode | Awesome Answers |
|---|---|
| Where is the greatest ocean pressure impact on an object, at the surface or bottom? | At the bottom of the ocean. |
| What percentage of the earth is made up of water? | Approximately 75%! |
| What percentage of the ocean can be explored by the underwater submarine Alvin? | 86% of ocean can be explored by Alvin. |
| How can a scientist detect the depth of an ocean? | With sound, as echoes bounce back to the surface and are recorded. |

## Experiments shown on the video:

### DEEP WATER HAS GREATER PRESSURE

***Objective: To demonstrate water pressure at different levels.***

- Cut the tops off three 2-liter plastic soda bottles, and the bottom off two of them.
- Stack the two bottles without tops or bottoms on top of each other, and then place them onto the third bottle with a bottom.
- Punch a hole just below where the bottles join, and an inch from the bottom of the third bottle.
- Tape the holes and fill the “tower” of bottles with water.
- Peel the tape off each bottle.
- Observe the stream of water shooting out of the holes. Which is longer? Why?

## More interesting stuff to do:

### TOO DENSE

***Objective: To demonstrate how density and surface currents are formed.***

- Use a clear plastic storage box or a glass bowl and fill it with room-temperature water.
- Prepare three 6-ounce drinking glasses as follows:
  - First, stir 2 ounces of salt into a 6-ounce glass of very cold water (refrigerated).
  - Second, fill one glass with plain hot tap water.
  - Third, stir 1 ounce of salt into a glass of hot tap water.
  - Add blue food coloring to the first glass, add green food coloring to the second glass, and red coloring to the third.
  - Pour the contents of each glass slowly into the large plastic container or bowl (pour down the side, if possible).
- Observe the different layers that are formed (dense cold water at the bottom, hotter water near the top) and what happens to the water levels as the water temperature changes.

### SALTY DOWN UNDER

***Objective: To determine if ocean salts come from land masses.***

- Place two pencils 2 inches apart in the middle of a piece of black construction paper.
- Place a round coffee filter on top of the two pencils.
- Pour 2 tablespoons of dirt and 2 tablespoons of salt into the coffee filter.
- Pour 3 ounces of water into the mixture and allow the water to drain through the filter paper onto the black paper. Let stand until dry.
- Remove filter paper and pencils when mixture has drained. The salt crystals that appear would be in the ocean.

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# Lesson Planning Worksheet

**Lesson Title** _____

**Objectives** _____

_____

_____

**Estimated Time Required** _____

**Materials Needed** _____

_____

**National Science Educational Standards**

_____

_____

_____

_____

_____

**Explore** _____

_____

_____

_____

**Apply** _____

_____

_____

_____

**Extend** _____

_____

_____

_____

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## Assess

As presentations are made, assess the quality of the student's work as thoroughly and as equitably as you possibly can. The following criteria can be used to assist in your assessment.

Name of Student _____

Question Investigated _____

| Initial Question | | | |
|---|---|---|---|
| 1<br>Question is broad and not well defined | 2<br>Question is defined but limited to single-answer responses. | 3<br>Question is clear and might elicit multiple responses that may lead to new ideas and additional questions. | 4<br>Question is engaging and provokes new ways of thinking about an issue. |
| **Methods for Finding Answers** | | | |
| 1<br>Students do not share planned or actual methods. | 2<br>Students share methods but they are unclear or vague. | 3<br>Students share methods but not the problems or successes of using the methods. | 4<br>Students share methods and problems or successes in using the methods. |
| **Results** | | | |
| 1<br>Student results are undefined. | 2<br>Student results are incomplete and do not adequately answer the question. | 3<br>Student results are complete, adequately answer the question, and include current research related to the question. | 4<br>Student results are complete, include current research, and have resulted in one or more additional questions. |
| **Communication** | | | |
| 1<br>Student is not prepared to speak. | 2<br>Presenter has distracting mannerisms and avoids eye contact with the audience. | 3<br>Presentation is clean and clear with some eye contact and very few distractions. | 4<br>Presentation is exceptional and unique. Presenter uses regular eye contact and avoids distractions. |

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# Student "Know / New" Chart

| Know | New |
| --- | --- |
| Write down what you know about the topic of the video. | Write down information from the video that is new to you. |
| | |

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# Student Recording Sheet

Name _____ Date _____

Title of Experiment _____

Question: (What are you testing?) _____

Procedure: (Describe the experiment) _____

Materials: (List what you used) _____

Observations: (Record what happened) _____

Results: (Make your own data table)

Conclusions: (Use your observations and results to describe what you learned)

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# Glossary

## *Ocean Exploration*

Fold and cut to use as flashcards.

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**OCEAN PRESSURE**

**Ocean pressure**

The amount of force applied from water to something located under the ocean at a certain depth. The greater the depth is, the greater the pressure.

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**SNORKEL**

**Snorkel**

A tube which extends above the water's surface enabling swimmers to use it for air intake.

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**SCUBA**

**SCUBA**

Gear used for swimming under water. (Self-Contained Underwater Breathing Apparatus).

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Fold and cut to use as flashcards.

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# SONAR

**SONAR**

An apparatus that detects the presence and location of a submerged object by means of reflected sound waves. (SOund NAvigation Ranging).

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# SUBMERSIBLE

**Submersible**

A vessel that is capable of being submerged underwater (e.g., a submarine).

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# CORRODE

**Corrode**

To gradually wear away an object by a chemical action.

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Name _____ Date _____

# Quiz

## *Ocean Exploration*

## True or False? Circle T or F

1. Since there are no constructive (volcanic activity) or destructive (erosion) forces at work under the ocean, the ocean floor is flat. T or F
2. Most of the Earth's surface is covered with ocean. T or F
3. Seawater is salty and has the ability to rot metal and wood. T or F
4. Ocean water has chemicals that do not negatively affect metal ships. T or F
5. Water pressure is greater the deeper down you go. T or F
6. Sound energy can be used to measure the ocean's depth. T or F

## Multiple Choice: Circle the letter of the best answer

7. Which of the following correctly describes the relationship between ocean depth and amount of light?
   - A. The greater the ocean depth, the brighter it gets.
   - B. The greater the ocean depth, the darker it gets.
   - C. The amount of available light is the same no matter the depth.
   - D. None of the above.

8. Which of the following accurately describes the relationship between ocean depth and pressure?
   - A. The greater the ocean depth, the greater the pressure gets.
   - B. The greater the ocean depth, the lower the pressure gets.
   - C. Ocean depth does not affect the pressure.
   - D. Pressure cannot be measured in the ocean.

9. Which of the following most accurately describes the amount of water that covers the Earth's surface?
   - A. The ocean covers just over half of the Earth's surface.
   - B. The ocean covers less than half of the Earth's surface.
   - C. Water covers over 95 percent of the Earth's surface.
   - D. Water covers 75 percent of the Earth's surface.

10. Which of the following is true about populations that live on or near the ocean floor?
    - A. They depend on the sun for energy.
    - B. They live in a low-pressure, high-temperature environment.
    - C. All of the food for these populations falls from above.
    - D. All of the above.

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# Answer Key

## *Ocean Exploration*

| | | | |
|---|---|---|---|
| 1. F | 4. F | 7. B | 9. D |
| 2. T | 5. T | 8. A | 10. C |
| 3. T | 6. T | | |

SUBMERSIBLE

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